

Cht 8 study guide Alg 1 2012-2013

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ____ 1. Find the GCF of 36 and 90.
a. 54
b. 36
c. 180
d. 18
- ____ 2. Find the GCF of 48 and 54.
a. 18
b. 48
c. 432
d. 6
- ____ 3. Find the GCF of 18 and 16.
a. 144
b. 4
c. 2
d. 16
- ____ 4. Factor $5(k-4) - 2k(k-4)$.
a. $(k-4)(5-2k)$
b. $(5-2k)(k-4)(k-4)$
c. $-10k(k-4)$
d. $(k-4)(2k-5)$
- ____ 5. Factor $6(k-3) - 5k(k-3)$.
a. $-30k(k-3)$
b. $(k-3)(5k-6)$
c. $(6-5k)(k-3)(k-3)$
d. $(k-3)(6-5k)$
- ____ 6. Factor $8(m-6) - 7m(m-6)$.
a. $(8-7m)(m-6)(m-6)$
b. $(m-6)(8-7m)$
c. $-56m(m-6)$
d. $(m-6)(7m-8)$
- ____ 7. Factor $x^2 + 26x + 48$.
a. $(x+4)(x+12)$
b. $(x+3)(x+16)$
c. $(x+2)(x+24)$
d. $(x+26)(x+48)$
- ____ 8. Factor the trinomial $m^2 + 12m + 27$.
a. $(m-9)(m-3)$
b. $(m+12)(m+1)$
c. $(m+3)(m+9)$
d. $(m+1)(m+27)$
- ____ 9. Factor the trinomial $d^2 - 4d - 12$.
a. $(d-6)(d+2)$
b. $(d-2)(d-6)$
c. $(d+1)(d-12)$
d. $(d-1)(d-12)$
- ____ 10. Factor the trinomial $p^2 + 4p - 45$.
a. $(p-1)(p-45)$
b. $(p-9)(p-5)$
c. $(p+1)(p-45)$
d. $(p-5)(p+9)$
- ____ 11. Factor the trinomial $b^2 + 5b - 36$.
a. $(b-9)(b-4)$
b. $(b+1)(b-36)$
c. $(b-4)(b+9)$
d. $(b-1)(b-36)$
- ____ 12. Factor the trinomial $b^2 - 3b - 54$.
a. $(b-6)(b-9)$
b. $(b-9)(b+6)$
c. $(b+1)(b-54)$
d. $(b-1)(b-54)$
- ____ 13. Factor the trinomial $s^2 - 8s - 20$.
a. $(s-1)(s-20)$
b. $(s-10)(s+2)$
c. $(s+1)(s-20)$
d. $(s-2)(s-10)$

_____ 14. Factor the trinomial $t^2 + 5t - 14$.

a. $(t - 2)(t + 7)$

b. $(t - 1)(t - 14)$

c. $(t + 1)(t - 14)$

d. $(t - 7)(t - 2)$

_____ 15. Factor the trinomial $p^2 + 4p - 60$.

a. $(p - 10)(p - 6)$

b. $(p - 6)(p + 10)$

c. $(p + 1)(p - 60)$

d. $(p - 1)(p - 60)$

Chpt 8 study guide Alg 1 2011-2012

Answer Section

MULTIPLE CHOICE

1. ANS: D

List all the factors of 36 and 90. Choose the greatest factor that is in both lists.

	Feedback
A	Check to see that this is a factor of both numbers. If so, check that it is the GREATEST common factor.
B	Check that this is a factor of the greater number.
C	This is the least common multiple (LCM) of the two numbers. Find the greatest common factor (GCF).
D	Correct!

PTS: 1 DIF: Basic REF: Page 525 OBJ: 8-1.2 Finding the GCF of Numbers
 NAT: 12.1.5.b TOP: 8-1 Factors and Greatest Common Factors
 KEY: common factor | factor | GCF | greatest common factor

2. ANS: D

List all the factors of 48 and 54. Choose the greatest factor that is in both lists.

	Feedback
A	Check to see that this is a factor of both numbers. If so, check that it is the GREATEST common factor.
B	Check that this is a factor of the greater number.
C	This is the least common multiple (LCM) of the two numbers. Find the greatest common factor (GCF).
D	Correct!

PTS: 1 DIF: Basic REF: Page 525 OBJ: 8-1.2 Finding the GCF of Numbers
 NAT: 12.1.5.b TOP: 8-1 Factors and Greatest Common Factors
 KEY: common factor | factor | GCF | greatest common factor

3. ANS: C

List all the factors of 18 and 16. Choose the greatest factor that is in both lists.

	Feedback
A	This is the least common multiple (LCM) of the two numbers. Find the greatest common factor (GCF).
B	Check to see that this is a factor of both numbers. If so, check that it is the GREATEST common factor.
C	Correct!
D	Check that this is a factor of the greater number.

PTS: 1 DIF: Basic REF: Page 525 OBJ: 8-1.2 Finding the GCF of Numbers
 NAT: 12.1.5.b TOP: 8-1 Factors and Greatest Common Factors
 KEY: common factor | factor | GCF | greatest common factor

4. ANS: A

$$5(k-4) - 2k(k-4)$$

The terms have a common binomial factor of $(k - 4)$.
 Factor out $(k - 4)$.
 $(k - 4)(5 - 2k)$

	Feedback
A	Correct!
B	The common factor should appear only once.
C	Check the signs.
D	Check the order of the second factor terms.

PTS: 1 DIF: Basic REF: Page 533
 OBJ: 8-2.3 Factoring Out a Common Binomial Factor NAT: 12.5.3.d
 TOP: 8-2 Factoring by GCF

5. ANS: D
 $6(k - 3) - 5k(k - 3)$
 The terms have a common binomial factor of $(k - 3)$.
 Factor out $(k - 3)$.
 $(k - 3)(6 - 5k)$

	Feedback
A	Check the signs.
B	Check the order of the second factor terms.
C	The common factor should appear only once.
D	Correct!

PTS: 1 DIF: Basic REF: Page 533
 OBJ: 8-2.3 Factoring Out a Common Binomial Factor NAT: 12.5.3.d
 TOP: 8-2 Factoring by GCF

6. ANS: B
 $8(m - 6) - 7m(m - 6)$
 The terms have a common binomial factor of $(m - 6)$.
 Factor out $(m - 6)$.
 $(m - 6)(8 - 7m)$

	Feedback
A	The common factor should appear only once.
B	Correct!
C	Check the signs.
D	Check the order of the second factor terms.

PTS: 1 DIF: Basic REF: Page 533
 OBJ: 8-2.3 Factoring Out a Common Binomial Factor NAT: 12.5.3.d
 TOP: 8-2 Factoring by GCF

7. ANS: C
 The factors of $x^2 + 26x + 48$ are binomials.
 Use FOIL as a guide (**F**irst, **O**uter, **I**nnner, **L**ast) to find the binomial factors.
 The first terms multiply to x^2 .
 $(x + ?)(x + ?) = x^2$

The last terms multiply to 48. Check each pair of factors of 48 to find the inner and outer products that add to the middle term $26x$.

$$\begin{aligned}(x + 1)(x + 48) &= x^2 + 49x + 48 \\(x + 2)(x + 24) &= x^2 + 26x + 48 \\(x + 3)(x + 16) &= x^2 + 19x + 48 \\(x + 4)(x + 12) &= x^2 + 16x + 48 \\(x + 6)(x + 8) &= x^2 + 14x + 48\end{aligned}$$

The only factors of that 48 produce the correct middle term are 2 and 24.

$$x^2 + 26x + 48 = (x + 2)(x + 24)$$

	Feedback
A	Check the factors. The coefficient of the x term is the sum of the inner and outer products.
B	Check the factors. The coefficient of the x term is the sum of the inner and outer products.
C	Correct!
D	Use factors of the constant term. The coefficient of the x term is the sum of the inner and outer products.

PTS: 1 DIF: Average REF: Page 540

OBJ: 8-3.1 Factoring Trinomials by Guess and Check

NAT: 12.5.3.d

TOP: 8-3 Factoring $x^2 + bx + c$

8. ANS: C

$$m^2 + 12m + 27$$

$$(m + ?)(m + ?)$$

$$(m + 3)(m + 9)$$

Look for the factors of 27 whose sum is 12.

The factors are 3 and 9.

	Feedback
A	Use the FOIL method to check your answer.
B	Look for factors whose product is the trinomial's last term.
C	Correct!
D	Use the FOIL method to check your answer.

PTS: 1 DIF: Basic REF: Page 541

OBJ: 8-3.2 Factoring $x^2 + bx + c$ When c is Positive

NAT: 12.5.3.d

TOP: 8-3 Factoring $x^2 + bx + c$

9. ANS: A

$$d^2 - 4d - 12$$

$$(d + ?)(d + ?)$$

$$(d - 6)(d + 2)$$

Look for the factors of -12 whose sum is -4 .

The factors are -6 and 2 .

	Feedback
A	Correct!
B	Use the FOIL method to check your answer.
C	Use the FOIL method to check your answer.

D	Check the signs.
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PTS: 1 DIF: Basic REF: Page 542
 OBJ: 8-3.3 Factoring $x^2 + bx + c$ When c is Negative NAT: 12.5.3.d
 TOP: 8-3 Factoring $x^2 + bx + c$

10. ANS: D

$$p^2 + 4p - 45$$

$$(p + ?)(p + ?)$$

$$(p - 5)(p + 9)$$

Look for the factors of -45 whose sum is 4 .
 The factors are -5 and 9 .

	Feedback
A	Check the signs.
B	Use the FOIL method to check your answer.
C	Use the FOIL method to check your answer.
D	Correct!

PTS: 1 DIF: Basic REF: Page 542
 OBJ: 8-3.3 Factoring $x^2 + bx + c$ When c is Negative NAT: 12.5.3.d
 TOP: 8-3 Factoring $x^2 + bx + c$

11. ANS: C

$$b^2 + 5b - 36$$

$$(b + ?)(b + ?)$$

$$(b - 4)(b + 9)$$

Look for the factors of -36 whose sum is 5 .
 The factors are -4 and 9 .

	Feedback
A	Use the FOIL method to check your answer.
B	Use the FOIL method to check your answer.
C	Correct!
D	Check the signs.

PTS: 1 DIF: Basic REF: Page 542
 OBJ: 8-3.3 Factoring $x^2 + bx + c$ When c is Negative NAT: 12.5.3.d
 TOP: 8-3 Factoring $x^2 + bx + c$

12. ANS: B

$$b^2 - 3b - 54$$

$$(b + ?)(b + ?)$$

$$(b - 9)(b + 6)$$

Look for the factors of -54 whose sum is -3 .
 The factors are -9 and 6 .

	Feedback
A	Use the FOIL method to check your answer.
B	Correct!
C	Use the FOIL method to check your answer.
D	Check the signs.

PTS: 1 DIF: Basic REF: Page 542

OBJ: 8-3.3 Factoring $x^2 + bx + c$ When c is Negative

NAT: 12.5.3.d

TOP: 8-3 Factoring $x^2 + bx + c$

13. ANS: B

$$s^2 - 8s - 20$$

$$(s + ?)(s + ?)$$

$$(s - 10)(s + 2)$$

Look for the factors of -20 whose sum is -8 .

The factors are -10 and 2 .

	Feedback
A	Check the signs.
B	Correct!
C	Use the FOIL method to check your answer.
D	Use the FOIL method to check your answer.

PTS: 1

DIF: Basic

REF: Page 542

OBJ: 8-3.3 Factoring $x^2 + bx + c$ When c is Negative

NAT: 12.5.3.d

TOP: 8-3 Factoring $x^2 + bx + c$

14. ANS: A

$$t^2 + 5t - 14$$

$$(t + ?)(t + ?)$$

$$(t - 2)(t + 7)$$

Look for the factors of -14 whose sum is 5 .

The factors are -2 and 7 .

	Feedback
A	Correct!
B	Check the signs.
C	Use the FOIL method to check your answer.
D	Use the FOIL method to check your answer.

PTS: 1

DIF: Basic

REF: Page 542

OBJ: 8-3.3 Factoring $x^2 + bx + c$ When c is Negative

NAT: 12.5.3.d

TOP: 8-3 Factoring $x^2 + bx + c$

15. ANS: B

$$p^2 + 4p - 60$$

$$(p + ?)(p + ?)$$

$$(p - 6)(p + 10)$$

Look for the factors of -60 whose sum is 4 .

The factors are -6 and 10 .

	Feedback
A	Use the FOIL method to check your answer.
B	Correct!
C	Use the FOIL method to check your answer.
D	Check the signs.

PTS: 1

DIF: Basic

REF: Page 542

OBJ: 8-3.3 Factoring $x^2 + bx + c$ When c is Negative

NAT: 12.5.3.d

TOP: 8-3 Factoring $x^2 + bx + c$